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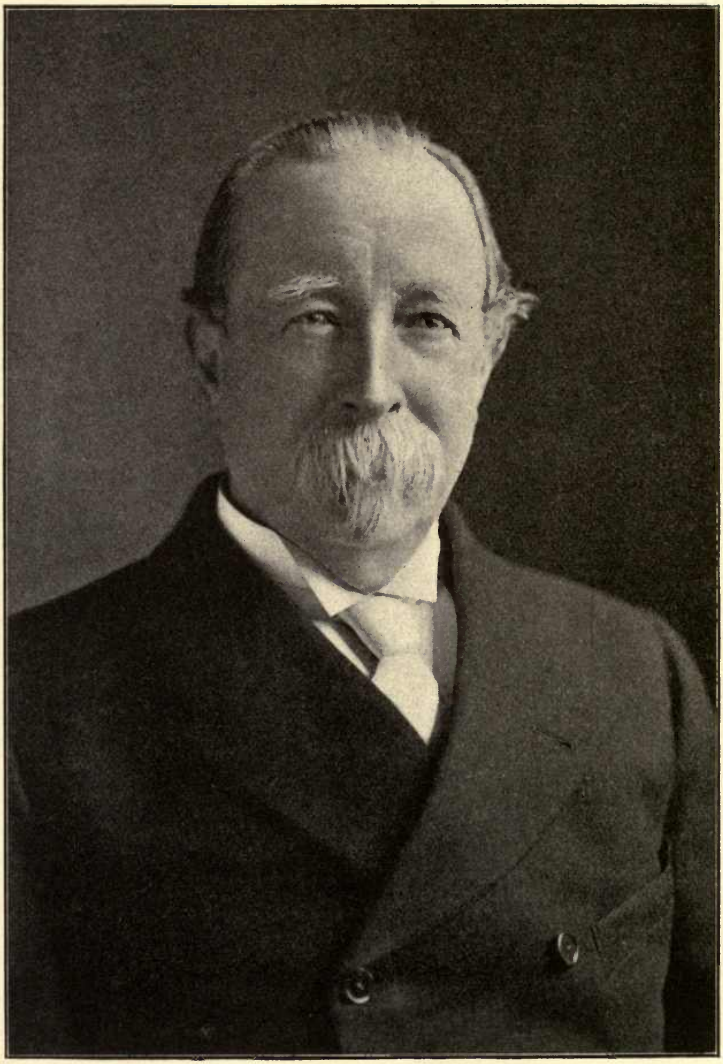

PORTRAIT OF A. O. HUME, C.B.

CATALOGUE

OF THE

HEADS AND HORNS

OF

INDIAN BIG GAME

BEQUEATHED BY

A. O. HUME, C.B.,

TO THE

BRITISH MUSEUM (NATURAL HISTORY).

By R. LYDEKKER, F.R.S.

UNIV. OF CALIFORNIA

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PREFACE

A GENERAL account of the remarkable series of specimens described in the following pages is given by Mr. Lydekker in his Introduction.

The late Mr. Allan Octavian Hume, C.B., who bequeathed the Collection, had been a benefactor of the Museum for many years. The Indian Mammals which he had presented were specially valuable, while his collection of skins and eggs of Birds from various parts of the Indian Empire, given nearly thirty years ago, consisted of some 82,000 specimens, and was described by the late Dr. R. Bowdler Sharpe as "one of the most splendid donations ever made to the Nation."

Mr. Hume kept the finest specimens of the heads of Big Game in his own possession until his death, and it is these specimens to which the present work principally refers. It is hoped that the Catalogue will be useful to sportsmen and others who are interested in the larger Mammals of our Indian Empire, but it will in any case serve the purpose of directing attention to the gifts of a generous benefactor and of associating his name permanently with the official publications of the Museum.

The thanks of the Trustees are due to Rowland Ward, Limited, for permission to use Figs. 1, 2, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, which were taken from the specimens in question, while they were still in Mr. Hume's possession, for the illustration of *Records of Big Game.*

SIDNEY F. HARMER,
Keeper of Zoology.

BRITISH MUSEUM (NATURAL HISTORY),
LONDON, S.W.
February, 1913.

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INTRODUCTION

By the kind permission of the Editor, the following obituary notice of Mr. Allan Octavian Hume, C.B., is reproduced, with some slight abbreviations and verbal alterations, from *The Times* of August 1st, 1912.

"Born on June 6, 1829, Mr. Hume was one of the six children of Joseph Hume, the reformer, who entered the medical service of the East India Company before the close of the 18th century, and came home in 1808 the possessor of a large fortune. He was at the height of his fame when Allan, early in 1849, passed out of the East India College, Haileybury, into the Indian Civil Service, and was posted to the North-West Provinces. The system of departmental examinations introduced soon after enabled Hume so to outdistance his seniors that when the Mutiny broke out he was officiating Collector of Etawah, which lies between Agra and Cawnpur. Rebel troops were constantly passing through the district, and for a time it was necessary to abandon headquarters; but both before and after the removal of the women and children to Agra, Hume acted with vigour and judgment. The steadfast loyalty of many native officials and landowners, and the people generally, was largely due to his influence, and enabled him to raise a local brigade of horse. In a daring attack on a body of rebels at Jaswantnagar he carried away the wounded joint magistrate, Mr. Clearmont Daniel, under a heavy fire, and many months later he engaged in a desperate action against Firoz Shah and his Oudh freebooters at Hurchandpur. Company rule had come to an end before the ravines of the Jumna and the Chambul in the district had been cleared of fugitive rebels. Hume richly merited the C.B. (Civil division) awarded him in 1860. He remained in charge of the district for ten years or so and did good work. Humeganj, a hand-

some square forming the centre of Etawah city, is but one of many examples of his zeal for building.

"Hume's appointment, in 1867, to be Commissioner of Customs in Upper India gave him charge of the huge physical barrier * which stretched across the country for 2,500 miles from Attock, on the Indus, to the confines of the Madras Presidency. He carried out the first negotiations with Rajputana Chiefs, leading to the abolition of this barrier, and Lord Mayo rewarded him with the Secretaryship to Government in the Home, and afterwards, from 1871, in the Revenue and Agricultural Departments. Leaving Simla, he returned to the North-West Provinces in October, 1879, as a member of the Board of Revenue, and retired from the service in 1882.

"Instead of coming to England he went back to the large house he had purchased at Simla, and set to work to form some organization which would focus the aspirations of advanced Indians throughout the country.

"Inheriting also his father's versatility, Hume was well known for botanical and ornithological work. During his long career he devoted most of his spare time and much money to collecting material for a great work, 'The Birds of India.' By his own efforts, and the assistance of forty or fifty willing helpers in all parts of India, he succeeded, after a quarter of a century's work, in gathering together in the museum of his Simla house an enormous collection of bird-skins and eggs. The manuscript for the book was almost complete, but it was never to appear. During the winter of 1884 the greater part of the invaluable papers were stolen from his museum during his absence, and, it is supposed, destroyed. He had to give up what had been the ambition of his life. His collection, consisting of 63,000 bird-skins, in perfect condition, and 19,000 eggs, he generously presented, in 1885, to the British Museum (Natural History). So important and valuable was the gift, that the late

* This was a thorn-hedge supplemented by walls and ditches, and strongly patrolled for preventing the introduction into British territory of untaxed salt from native states (see Sir John Strachey's "India," London, 1888).

Dr. Bowdler Sharpe was sent out to Simla to take over the collection and bring it to London. In 1891 Mr. Hume also presented to the Museum a number of skulls and horns of big game animals of the Indian Empire and the neighbouring countries. He wrote various ornithological monographs, and in collaboration with Colonel C. H. T. Marshall (who was responsible for the illustrations rather than the text), he brought out in three volumes, 'The Game Birds of India, Burma, and Ceylon,' published in Calcutta from 1879 to 1881. His botanical hobby was industriously pursued until his last illness. He founded and endowed the South London Botanical Institute at Tulse Hill, and gave it his collection of from 30,000 to 40,000 sheets of preserved British and casual alien plants, brought together chiefly by his own labour, from all parts of the British Isles.

"He married Mary Anne Grindall, who died in 1890, and their only child is the widow of Mr. Ross Scott, sometime Judicial Commissioner of Oudh."

Mr. Hume, who had for some time previously been in indifferent health, died at his residence, The Chalet, 4, Kingswood Road, Upper Norwood, on Wednesday, July 31st, 1912, at the age of eighty-three.

By his will Mr. Hume left to the Trustees of the Museum the collection of skulls and horns which forms the subject of the present Catalogue. The following notice of the bequest appeared in *The Times* of November 1st, 1912, and is reproduced, with a few omissions and verbal alterations, by the Editor's permission:—

"Taken in conjunction with Mr. Hume's gift in 1891, of the bulk of his collection of similar objects, it constitutes one of the most valuable acquisitions of the kind ever received by the Museum. Apart from the collection presented at various times during the first half of the last century by Mr. Brian Hodgson, the Museum before 1891 was poor in specimens of Indian big game, whereas it now possesses, thanks to Mr. Hume, a collection of these objects which is certainly unsurpassed and probably unrivalled. When Mr. Hume gave the bulk of his collection to the Museum in 1891, he reserved for himself a certain number of picked

specimens, and it is these that have now become the property of the nation.

"The collection, which embraces specimens not only from India proper, but from the Himalaya, Kuen-lun, the Pamirs, Burma, etc., was made at a time when the big game of many parts of this area was more abundant than is the case at the present day, and consequently includes finer examples of many species than are now obtainable. And it is this which constitutes its chief value and interest, as it would nowadays be impossible to bring together a similar collection. Mr. Hume never did things by halves, and when his collections of big-game trophies and birds were made he had collectors or agents at work in all the countries accessible from India.

"Nowadays, it is almost superfluous to mention, sportsmen attach a high value to heads which are 'records,' or nearly such, in the matter of horn-length; and it is obvious that as many specimens as possible of this class—as being the finest and handsomest of their kind—ought to be in the national collection. In specimens of this nature the Hume bequest is particularly rich, containing four which appear to be 'records' in their particular species or race, and many others which approximate more or less closely in dimensions to this standard.

"Among the species represented by unusually fine heads are the yak of Tibet, the chiru antelope, with its long V-shaped black horns, of the same area, the Goitred, Yarkand, and Indian gazelles, the blackbuck of the plains of India, the markhor goat and ibex of the Himalaya, the tahr or ibex of the Nilgiris—which survives as the result of Government protection—the gaur of the Pachmarri and other Indian hill-ranges, and the buffalo of Assam. Wild sheep are strongly represented, the chief species and races being the Tibetan race of the argali, Marco Polo's sheep of the Pamir, the smaller urial of the Punjab and Ladak, and the Tibetan bharal, which stands midway between sheep and goats.

"Among the deer tribe the place of honour belongs to the Sikhim stag, or shou, of which there are two magnificent

heads, one being the actual 'record.' Till Mr. Hume made his collection shou heads were very rare in Europe, and even now they are much thought of even in the neighbourhood of their own country. Other species in the collection include the hangul of Kashmir, the sambar, the chital or spotted deer, and the barasingh of the plains of India, the thamin of Burma, remarkable for the unique form of its antlers, and the Yarkand stag, which is the more valuable on account of the circumstance that examples of this deer have been difficult to obtain since the Chinese occupation of the country."

The following Table exhibits the position occupied by the finest heads in the bequest in Mr. Rowland Ward's 'Records of Big Game,' ed. 6, 1910 :—

Species.	Length of Hume Specimen.	Position in Big Game Records.	Record Length.
Yarkand Stag	39½	4	41½
Shou ,, ...	55¾	1	—
Sambar ,, ...	46½	6	55⅛
Chital ,, ...	38¼	4	39
Hog-Deer	19½	14	23½
Thamin	38¼	6	42
Chiru.	27¾	1	—
Blackbuck	28¼	3	30½
Yarkand Gazelle	16	2	17
Arakan Serow	9½	5	10 5/16
Himalayan ,, ...	12¼	1	—
Tahr	14⅛	9	15½
Nilgiri Tahr	16¾	3	17½
Punjal and Astor Markhor . .	54½	18	63
Cabul and Suleiman ,, . . .	32	11	48½
	31½	12	48½
Leh Ibex	48⅕	1	—
Sind Wild Goat	52⅜	3	55½
Bharal	30⅞	3	32½
Tibetan Argali	48	14	57
Pamir ,, ...	66⅞	17	75
Leh Urial	36¼	4	39
Baluchi ,, ...	33½	12	39¾
Buffalo	56½	20	77¾
Yak	38¾	2	39

In addition to the specimens comprised in the bequest —105 in number—the present Catalogue includes two of

the specimens presented to the Museum by Mr. Hume in 1891, as these respectively form the types of two races.

The synonomy of the various species and races included in the Catalogue makes no pretence to be complete, but is merely sufficient to explain complicated points in nomenclature and to indicate to the reader where to refer to descriptive accounts of the various species and races. Brief descriptive notices of the species and races have been introduced where it appeared desirable.

Unless the contrary is stated, the heads and horns pertain to male animals.

It may be mentioned that the technical names employed in this Catalogue are mainly based on priority, and that in several instances they differ from those used by the late Dr. Blanford and by the author in other works.

All the illustrations are from specimens in the collection described.

R. LYDEKKER.

February, 1913.

CATALOGUE

OF THE

HUME BEQUEST

OF

INDIAN BIG GAME

Family **BOVIDÆ.**

THE GAUR.

Bos (Bibos) gaurus.

Bos gaurus, *Hamilton Smith, in Griffith's Animal Kingdom*, vol. iv, p. 399, 1827; *Blanford, Fauna Brit. India, Mamm.* p. 484, 1891; *Lydekker, Game Animals of India, etc.* p. 50, 1907; *Ward, Records of Big Game*, ed. 6, p. 440, 1910.

1.—12. 10. 31. 81.* Skull, with horns. Northern Travancore; collected by Mr. A. W. Turner. Outer length of horns 31,† girth 16¼, tip-to-tip interval 29 inches.

2.—12. 10. 31. 82. Skull, with horns. Southern Mishmi Hills. Outer length of horns 29, girth 15¾, tip-to-tip interval 36½ inches.

3.—12. 10. 31. 80. Skull, with horns, female (fig. 1). Northern Travancore; collected by Mr. A. W. Turner. Length of horns 24, girth 13¼, tip-to-tip interval 13 inches. This specimen stands No. 65 in Mr. Ward's list, where it is the record for its sex.

* This means the 81st specimen registered on October 31, 1912.

† This indicates the maximum length along the outer curve. If in this and the following specimens there is any difference in the size of the two horns, the dimensions refer to the larger one.

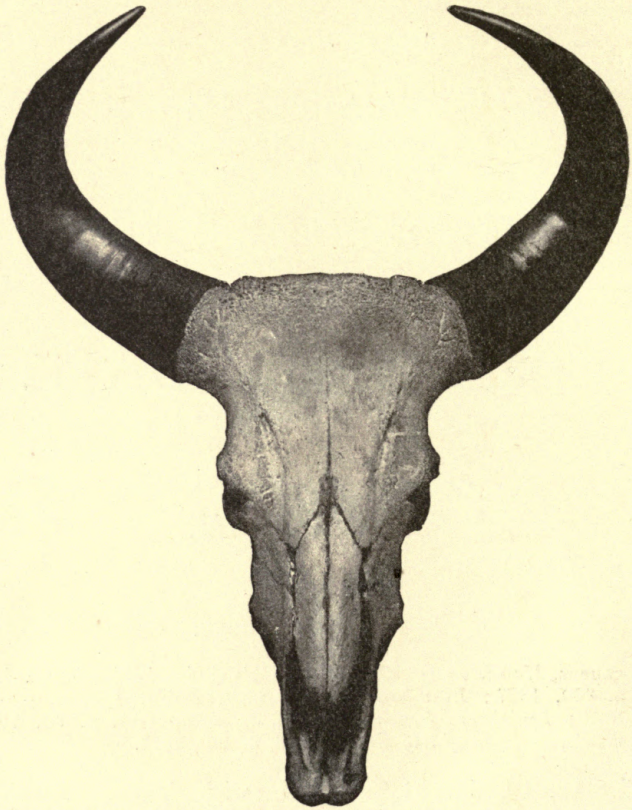

FIG. 1.—SKULL AND HORNS OF COW GAUR (*Bos* [*Bibos*] *gaurus*).
From Ward's *Records of Big Game.*

THE GAYAL.

BOS (BIBOS) FRONTALIS.

Bos frontalis, *Lambert, Trans. Linn. Soc.*, vol. vii, pp. 57, 302, 1804; *Blanford, Fauna Brit. India, Mamm.* p. 487, 1891; *Lydekker, Game Animals of India, etc.* p. 64, 1907; *Ward, Records of Big Game*, ed. 6, p. 446, 1910.

Although long regarded as a distinct species, there is no reasonable doubt that the gayal is merely a domesticated breed of the gaur, some herds of which have reverted to a wild condition. Unfortunately the name *frontalis* antedates *gaurus*.

4.—12. 10. 31. 88. Skull, with horns (fig. 1). Tenasserim,

between the town of that name and Lemyne; shot by Mr. W. Davison, Mr. Hume's collector. Length of horns 14½, girth 13½, tip-to-tip interval 28 inches. This specimen stands No. 3 in Mr. Ward's list. It is mentioned by Blanford as being the only wild gayal with which he was acquainted.

THE YAK.

Bos (Poëphagus) grunniens.

Bos grunniens, *Linn., Syst. Nat.* ed. 10, vol. i, p. 71, 1758, ed. 12, vol. i, p. 99, 1766; *Blanford, Fauna Brit. India, Mamm.* p. 490, 1891; *Lydekker, Game Animals of India, etc.* p. 76, 1907; *Ward, Records of Big Game*, ed. 6, p. 437, 1910.

5.—12. 10. 31. 85. Skull, with horns (fig. 2), Angir-takshin Pass, Kuen-lun Mountains; shot, in the 'seventies,

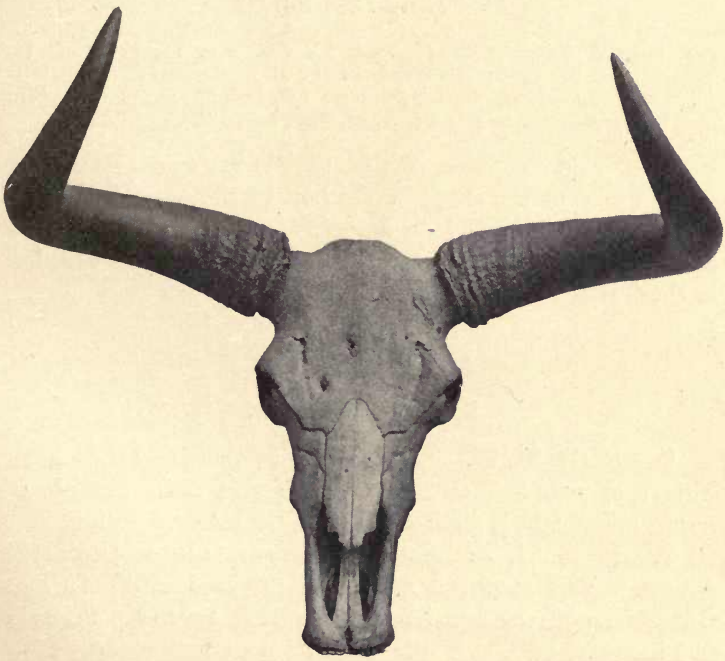

Fig. 2.—Skull and Horns of Yak (*Bos [Poëphagus] grunniens*).
From Ward's *Records of Big Game.*

by Mr. A. Dalgleish, who in the early part of that decade was attached to the Central Asian Trading Company, and was

subsequently killed in Kashgaria. Length of horns 38¾, girth 18½, tip-to-tip interval 26½ inches. This specimen stands No. 2 in Mr. Ward's list, and is exceeded in horn-length only by a skull in the Lucknow Museum, in which the horn-length is stated to be 39 inches; since, however, the two specimens were not measured with the same tape, it is quite possible that re-measurement with a steel tape would reverse their respective positions. The next best specimen is one also from the Kuen-lun, presented to the Museum by Mr. Hume in 1891, in which the horn-length is 38¼ inches.

THE INDIAN BUFFALO, OR ARNA.

BOS (BUBALUS) BUBALIS.

Bos bubalis, *Linn.*, *Syst. Nat.* ed. 10, vol. i, p. 71, 1758, ed. 12, vol. i, p. 99, 1766; *Blanford, Fauna Brit. India, Mamm.* p. 291, 1891; *Lydekker, Game Animals of India, etc.* p. 83, 1907; *Ward, Records of Big Game*, ed. 6, p. 427, 1910.

Two phases, or races, of this buffalo are found in Assam, which differ in the shape of the horns; those of the typical form curving upwards in a sub-circular manner, while those of the other are directed more or less outwards. In addition to these is the dun buffalo.

A.—Typical Race.

Bos bubalis bubalis.

6.—12. 10. 31. 84. Skull, with horns. Dhubri, Assam. This specimen is No. 20 in Mr. Ward's list. Length of horns, outside, 56¼, girth 21½, tip-to-tip interval 40 inches.

7.—12. 10. 31. 83. Skull, with horns, female. Gowhatti, Assam. This specimen stands No. 29 in Mr. Ward's list. Outside length of horns 54½, girth 12¾, tip-to-tip interval 69¾ inches.

B.—Assam Dun Buffalo.

Bos bubalis fulvus.

Bos bubalis *var.* fulvus, *Blanford, Fauna Brit. India, Mamm.* p. 492, 1891.

Bos bubalis fulvus, *Lydekker, Wild Oxen, Sheep, and Goats*, p. 126, 1898; *Game Animals of India, etc.* p. 88, 1907.

As one of the two type specimens was presented to the Museum by Mr. Hume in 1891, this race is included in the present Catalogue. It was described by Dr. Blanford as follows:—"There is a very distinct race of a dun colour that inhabits Upper Assam. I have seen two heads of bulls, one in Mr. Hume's collection, now in the British Museum, the other in the Indian Museum, Calcutta. These differ (from the normal form) in the much more convex forehead, and the skull is remarkably short in front of the orbits, the nasals being shorter than the distance from their posterior end to the vertex, whilst in ordinary buffaloes they are larger." This communicates a concavity to the profile, which, together with the shortness of the preorbital region, recalls to some extent the skulls of African buffaloes (*B. caffer*).

91. 8. 7. 215. Skull and horns. Co-type. Mishmi Hills.

THE ARGALI.

Ovis ammon.

Capra ammon, *Linn.*, *Syst. Nat.* ed. 10, vol. i, p. 70, 1758, ed. 12, vol. i, p. 97, 1766.

Ovis ammon, *Erxleben*, *Syst. Nat.*, *Mamm.* p. 250, 1777; *Ward, Records of Big Game*, ed. 6, p. 398, 1910; *Lydekker, The Sheep and Its Cousins*, p. 268, 1912.

All the big wild sheep of Central Asia allied to the argali of the Altai are best regarded as local races of that species; an almost complete gradation connecting the massive, closely curved horns of the typical argali with the lighter and more open type characterising those of the Pamir argali.

A.—Tibetan Argali.

Ovis ammon hodgsoni.

Ovis hodgsoni, *Blyth*, *Proc. Zool. Soc.*, 1840, p. 65; *Blanford*, *Fauna Brit. India*, *Mamm.* p. 494, 1891.

Ovis ammon hodgsoni, *Lydekker*, *Game Animals of India*, *etc.* p. 95, 1907; *Ward*, *Records of Big Game*, ed. 6, p. 399, 1910.

8.—12. 10. 31. 67. Skull, with horns. Ladak; collected by A. Dalgleish. In this specimen, which stands No. 14 in Mr. Ward's list, the length of the horns is 46½, the girth 19¾, and the interval between the tips 20 inches; the corresponding dimensions in the record specimen being 57, 18¾, and 29 inches.

9.—12. 10. 31. 68. Skull, with horns, Chantang, Rudok, Western Tibet, near Pangong Lake.

10.—12. 10. 31. 69. Skull, with horns, Ma Chan, Gartok, Western Tibet.

11.—12. 10. 31. 70. Skull, with horns, Hundes, Tibet.

B.—Kashgarian Argali.

Ovis ammon humei, subsp. n.

Ovis poli, *Stoliczka*, *Proc. Zool. Soc.*, 1874, p. 425, pl. liii, nec *Blyth*, 1840; *Blanford*, *Fauna Brit. India*, *Mamm.* p. 496, 1891, *in part.*

Ovis karelini, *Brooke*, *Proc. Zool. Soc.* 1875, p. 512; *Blanford*, *Zool. 2nd Yarkand Mission*, *Mamm.* p. 80, 1878; nec *Severtzow*, 1873.

The wild sheep obtained by the Second Yarkand Expedition from the north-west of Kashgar, on the flanks of the Tian Shan, were identified by Stoliczka with *O. poli*. Sir Victor and Mr. Basil Brooke subsequently referred them to *O. karelini*, Severtzow, of which the typical locality is the Ala-tau, north of Lake Issik (Issik Kul), in the Semiretchensk Altai, although it was pointed out that the white rump-patch is considerably larger than in the typical *karelini*. This identification was accepted by Blanford in the "Zoology of the Second Yarkand Mission," but in the "Fauna of British India" he came to the conclusion that *karelini*, as represented by the Kashgarian specimens, was inseparable from *poli*. In

1902 the present writer* described a sheep from the south-east of Kulja, or Ili, in the Tian Shan, as *O. sairensis littledalei*, a title subsequently changed to *O. ammon littledalei*,† and he has hitherto been in doubt whether the Kashgarian sheep should be referred to this race, to *karelini*, or to a distinct form. A re-examination of the specimens in the Museum (including a skin of *littledalei* obtained with the type) has led to the conclusion that the Kashgarian sheep represents a distinct race, for which the name of *O. ammon humei* is proposed; the type being a mounted ram in the Museum, brought home by the Yarkand Mission, and described by Brooke,‡ with which the under-mentioned pair of horns may be associated.

The following are the distinctive features of these races (of which only the last is included in this Catalogue), from specimens in the winter coats:—

O. a. littledalei. Horns (fig. 3) shorter and less expanded

Fig. 3.—Skull and Horns of Kulja Argali (*Ovis ammon littledalei*).

than in *poli*, forming a little more than one complete turn. Head brownish grey, with a nearly pure white muzzle; throat-ruff pale yellowish fawn; general colour of upper-parts (including nape) bright rufous fawn, rather darker on middle of back, but no distinct dorsal line or flank-band; thighs coloured like back; no light rump-patch; tail pale yellowish fawn, with a whitish tinge; fore-legs whitish grey

* *Proc. Zool. Soc.*, 1902, p. 83.

† Lydekker, *Field*, vol. cxiii, p. 117, 1909, *The Sheep and Its Cousins*, p. 277, 1912.

‡ *Op. cit.*, p. 513.

in front to knee, where there is a yellowish patch; hind-legs whitish grey in front nearly to hoofs, above which they are light fawn; throat-ruff coloured much like tail.

*O. a. karelini.** Horns † of the general type of *littledalei*, but rather heavier. Head pale fawn on forehead and cheeks, shading into white on muzzle; throat-ruff white, shaded with grey; general colour light brown, becoming lighter towards tail, where it is greyish white; a distinct dark dorsal streak and broad flank-band; a rather small white rump-patch, which includes the white tail; hind surface of thighs white, gradually shading into fawn of fore part of sides of same; upper part of fore-legs to knees, and lines on outer and inner sides of hind-legs to hoofs pale fawn; under-parts yellowish white.

O. a. humei. Horns ‡ more or less of the *littledalei* type, but with the outer front edge rounded in adults. Head greyish brown above and at sides, but whitish on most of face; back brownish grey, without dark dorsal streak, and no distinct flank-band; under-parts, limbs (including whole of thighs), a large rump-patch, and tail pure white.

12.—12. 10. 31. 87. Frontlet and horns, apparently belonging to an immature individual. Paratype. Tian Shan, north of the Maralbashi Forest; collected by Mr. A. Dalgleish. Length along outer curve 47, girth 13¼, tip-to-tip 40 inches.

C.—Pamir Argali.

Ovis ammon poli.

Ovis poli, *Blyth*, *Proc. Zool. Soc.* 1840, p. 62 (polii); *Blanford*, *Fauna Brit. India*, *Mamm.* p. 496, 1891; *Lydekker*, *Wild Oxen*, *Sheep*, *and Goats*, p. 188, 1898, *Game Animals of India*, *etc.* p. 89, 1907.

Ovis ammon poli, *Lydekker*, *Field*, vol. cxiii. p. 117, 1909, *The Sheep and Its Cousins*, p. 282, 1912; *Ward*, *Records of Big Game*, ed. 6, p. 405, 1910.

13.—12. 10. 31. 76. Skull and horns (fig. 4). Valley between Little and Great Pamir. In this head, which stands No. 17 in Mr. Ward's list, the length of the horns is 66¾, the

* Severtzow, *Trans. Soc. Nat. Moscow*, vol. viii, pl. 1, 1873.
† *The Sheep and Its Cousins*, pl. xxii, fig. 1.
‡ Brooke, *op. cit.*, p. 512, figs. 2, 3.

girth 13⅞, and the tip-to-tip interval 46½ inches. The record length is 75 inches.

14.—12. 10. 31. 74. Skull and horns. Same locality; collected by Mr. A. Dalgleish.

15.—12. 10. 31. 75. Skull and horns. Same locality; collected by Mr. Dalgleish.

16.—12. 10. 31. 79. Skull and horns (fig. 4). Same locality.

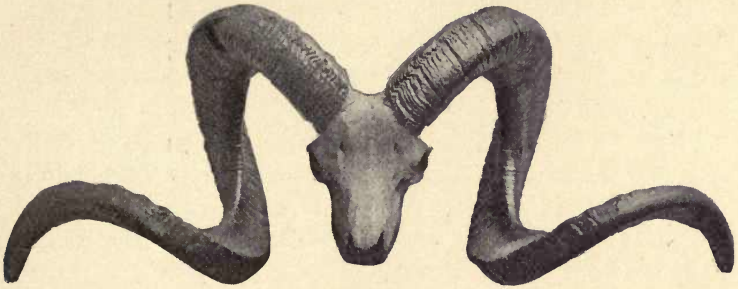

FIG. 4.—SKULL AND HORNS OF PAMIR ARGALI (*Ovis ammon poli*).

THE URIAL, OR SHA.

OVIS VIGNEI.

Ovis vignei, *Blyth, Proc. Zool. Soc.* 1840, p. 70; *Blanford, Fauna Brit. India, Mamm.* p. 497, 1891; *Lydekker, Wild Oxen, Sheep, and Goats*, p. 166, 1898, *Game Animals of India, etc.* p. 99, 1907, *The Sheep and Its Cousins*, p. 261, 1912; *Ward, Records of Big Game*, ed. 6, p. 468, 1910.

This species is represented by several local races, of which three are represented in the collection, one of them having been named by Mr. Hume.

A.—Astor and Ladak Urial.

Ovis vignei vignei.

Although typically from the Astor district, where it is known as urin, this race is taken to include the urial or sha —plural shapo—of Ladak.

17.—12. 10. 31. 99. Skull and horns. Near Leh, at an elevation of 10,000 feet; collected by Mr. Ney Elias, the well-known Central Asian traveller. In this specimen, which stands No. 4 in Mr. Ward's list, the horns measure 36¼ inches

in length by 11½ in girth, with a tip-to-tip interval of 4½ inches. The record horn-length is 39 inches.

B.—Punjab Urial.

Ovis vignei punjabiensis, nom. n.

Ovis vignei cycloceros, *Lydekker, Wild Oxen, Sheep, and Goats*, p. 172, *Game Animals of India, etc.* p. 101, 1907, *The Sheep and Its Cousins*, p. 261, 1912; *Ward, Records of Big Game*, ed. 6, p. 410, 1910; nec O. cycloceros, *Hutton*.

This race, the true urial, is a rather smaller and redder sheep than the last, with the girth of the horns seldom exceeding 10 inches.

18.—12. 10. 31. 65. Skull and horns, Salt Range, Punjab; shot by Mr. Hume. Length of horns 33½, girth 9¼, tip-to-tip interval 12½ inches. This is the second best urial definitely known to be from the Salt Range in Mr. Ward's list; the horn-length in the best being 34 inches.

C.—Afghan Urial.

Ovis vignei cycloceros.

Ovis cycloceros, *Hutton, Calcutta Journ. Nat. Hist.*, vol. ii, p. 514, 1842.

Ovis blanfordi, *Hume, Journ. Asiat. Soc. Bengal*, vol. xlvi, pt. 2, p. 327, 1877.

Ovis vignei blanfordi, *Lydekker, Wild Oxen, Sheep, and Goats*, p. 174, 1898, *Game Animals of India, etc.* p. 100, 1907, *The Sheep and Its Cousins*, p. 264, 1912; *Ward, Records of Big Game*, ed. 6, p. 410, 1910.

In this race the horns (fig. 5) are thicker than in the last, and tend to turn outwards at the tips, forming a more open spiral than in the other races, and have the front angles prominent and occasionally showing a beaded structure.

The urial inhabiting Waziristan and the Trans-Indus districts generally, as well as Baluchistan, are included in this race.

19.—12. 10. 31. 71. Skull and horns. Kelat, Baluchistan. Type of *blanfordi;* collected by Dr. Duke. Length of horns 34½, girth 9, tip-to-tip interval 17 inches.

20.—12. 10. 31. 66. Skull and horns (fig. 5). Haji Khan, Kelat. Length of horns 37½, girth 10¼, tip-to-tip

interval 12 inches. These dimensions are exceeded by specimens from Waziristan.

21.—12. 10. 31. 73. Skull and horns. Seah Koh, Afghanistan; shot by Col. G. de Morton.

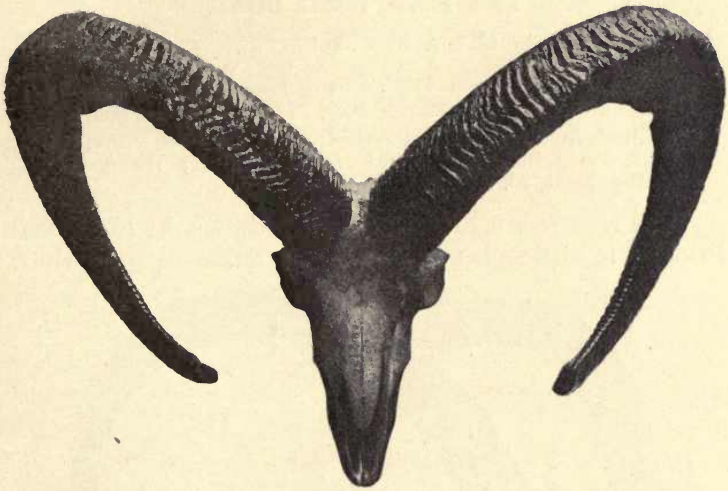

FIG. 5.—SKULL AND HORNS OF AFGHAN URIAL (*Ovis vignei cycloceros*).

THE BHARAL, OR BLUE SHEEP.

PSEUDOIS NAHOOR.

Ovis nayaur, *Hodgson*, *Asiatic Researches*, vol. xviii, pt. 2, p. 135, 1833, in part.

Ovis nahoor, *Hodgson*, *Proc. Zool. Soc.* 1834, p. 107.

Ovis burrhel, *Blyth*, *Proc. Zool. Soc.* 1840, p. 67.

Ovis nahura, *Gray*, *List Mamm. Brit. Mus.*, p. 170, 1843; *Blanford*, *Fauna Brit. India*, *Mamm.* p. 499, 1891; *Ward*, *Records of Big Game*, ed. 6, p. 387, 1910.

Pseudois nahoor, *Hodgson*, *Journ. Asiat. Soc. Bengal*, vol. xv, p. 343, 1846.

Pseudois nahura, *Nathusius*, *Zool. Anz.* 1888, p. 333; *Ward*, *Records of Big Game*, ed. 6, p. 387, 1910; *Lydekker*, *Wild Oxen*, *Sheep*, *and Goats*, p. 231, 1898, *The Sheep and Its Cousins*, p. 309, 1912.

Ovis (Pseudois) nahura, *Lydekker*, *Game Animals of India*, *etc.* p. 105, 1907.

Pseudois nayaur, *Pocock*, *Proc. Zool. Soc.* 1910, p. 863.

22.—12. 10. 31. 77. Skull and horns. Garhwal. This specimen stands No. 3 in Mr. Ward's list. Length of horns

30⅞, girth 12¼, tip-to-tip interval 21⅞. The record horn-length is 32½ inches.

23.—12. 10. 31. 78. Skull and horns. Garhwal.

THE SIND WILD GOAT.

CAPRA HIRCUS BLYTHI.

Capra blythi, *Hume*, *Proc. Asiat. Soc. Bengal*, 1874, p. 240.
Capra ægagrus, *Blanford*, *Fauna Brit. India*, *Mamm.* p. 502, 1891.
Capra hircus blythi, *Lydekker*, *Wild Oxen*, *Sheep*, *and Goats*, p. 264, 1898, *Game Animals of India*, *etc.* p. 108, 1907; *Ward*, *Records of Big Game*, ed. 6, p. 378, 1910.

This race was named, without description, by Mr. Hume in order to distinguish it from *Capra caucasica*, with which

FIG. 6.—SKULL AND HORNS OF SIND WILD GOAT (*Capra hircus blythi*).
From Ward's *Records of Big Game*.

it had previously been confounded. It differs from the Persian wild goat (*C. hircus ægagrus*) by its smaller size, the slight

development, or even absence, of the knots on the front edge of the scimitar-like horns, which are more closely approximated at the tips, and apparently also by the paler ground-colour of the coat.

24.—12. 10. 31. 62. Skull and horns (fig. 6). Surjan Hills, Sind; shot by Col. F. Marston. Length of horns on front edge $52\frac{3}{8}$, girth $7\frac{7}{8}$, tip-to-tip interval $8\frac{3}{4}$ inches. The record length is $55\frac{1}{2}$ inches.

25.—12. 10. 31. 63. Skull and horns. Twenty miles north-west of the Eric Hills, Sind.

26.—12. 10. 31. 64. Skull and horns. Mekran Hills; shot by Mr. J. Stupp.

THE ASIATIC IBEX.

CAPRA SIBIRICA.

Capra sibirica, *Meyer, Zool. Annal.* vol. i, p. 397, 1794; *Blanford, Fauna Brit. India, Mamm.* p. 503, 1891; *Lydekker, Wild Oxen, Sheep, and Goats*, p. 255, 1898, *Game Animals of India, etc.* p. 113, 1907; *Ward, Records of Big Game*, ed. 6, p. 369, 1910.

This species, the finest representative of the true ibexes, has been subdivided into a number of local races, of which the typical one inhabits the Sayansk Range, to the westward of Lake Baikal.

A.—Kashmir Race.

Capra sibirica sakeen.

Capra sakeen, *Blyth, Journ. Asiat. Soc. Bengal*, vol. xi, p. 283, 1841.
Ibex sakin, *Hodgson, Journ. Asiat. Soc. Bengal*, vol. xvi, p. 700, 1847.
Capra sakin, *Blanford, Fanna Brit. India, Mamm.* p. 504, 1891.
Capra sibirica sacin, *Lydekker, Wild Oxen, Sheep, and Goats*, p. 284, 1898, *Proc. Zool. Soc.* 1901, vol. i, p. 91, pl. x, *Game Animals of India, etc.* p. 119, 1907; *Ward, Records of Big Game*, ed. 6, p. 369, 1910.

This race, which inhabits the mountains bordering the northern and eastern sides of the Valley of Kashmir, from which it may extend eastwards and northwards, is distinguished by the light colour of the back and the lower part of the back of the neck, which, with the exception of a narrow light brown dorsal stripe, is pale brownish or creamy white.

27.—12. 10. 31. 60. Skull and horns. Kashmir.

28.—12. 10. 31. 59. Skull and horns, belonging to the Kashmir or an allied race. Mushnai, Khagan, between Kashmir and Afghanistan.

B.—Lahul Race.

Capra sibirica filippii.

Capra sibirica filippii, *Camerano*, *Atti Ac. Sci. Torino*, vol. xlvi, p. 199, 1911.

Distinguished from the Balti and allied races by horn-characters.

29.—12. 10. 31. 61. Skull and horns. Sutlej Valley above Rampur.

The following specimens may belong to this race:—

30.—12. 10. 31. 58. Skull and horns. Upper Shyok Valley, Nubra, north of Leh; collected by Mr. Ney Elias. This, the best ibex-head in the collection, stands No. 39 in Mr. Ward's list. The horns measure 48½ inches in length and 9⅝ in girth, with a tip-to tip interval of 30½ inches. The record length for Asiatic ibex (Tian Shan race) is 58 inches.

31.—12. 10. 31. 57. Skull and horns. Near Leh; collected by Mr. Elias.

THE MARKHOR.

CAPRA FALCONERI.

Ægoceros (Capra) falconeri, *Wagner*, *Münch. gelehrt. Anzeiger*, vol. ix, p. 430, 1839.

Capra falconeri, *Wagner*, in *Hügel's Kaschmir*, vol. iv, 579, 1848; *Blanford*, *Fauna Brit. India*, *Mamm.* p. 505, 1891; *Lydekker*, *Wild Oxen*, *Sheep*, *and Goats*, p. 286, 1898, *Game Animals of India*, *etc.* p. 121, 1907; *Ward*, *Records of Big Game*, ed. 6, p. 360, 1910.

All the forms of wild goats with the horns twisted in screw-like or corkscrew-like fashion are included under this specific title; the variation in the shape of the horns being taken for the basis of division into local races, at least some of which appear to intergrade.

A.—Astor Markhor.

Capra falconeri falconeri.

In this, the typical, race the horns form a more open spiral and are more divergent than in any of the others; their length being also great, although not the maximum.

32.—12. 10. 31. 55. Frontlet and horns (fig. 7). Astor. In this specimen, which stands No. 43 in Mr. Ward's list, the

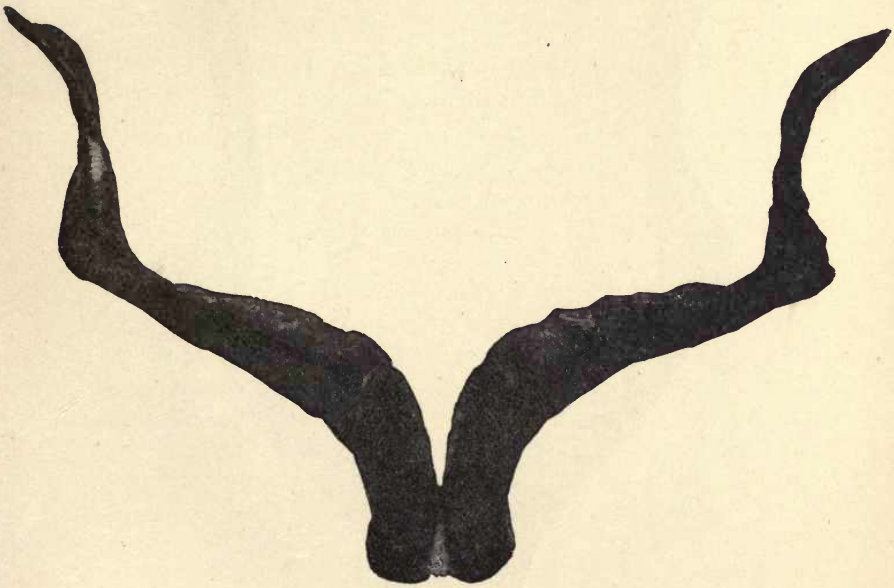

Fig. 7.—Frontlet and Horns of Astor Markhor (*Capra falconeri falconeri*).

From Ward's *Records of Big Game.*

horns measure 49 inches in length along the curve, 35 inches in a straight line, and 14 in girth, with a tip-to-tip interval of 44 inches.

33.—12. 10. 31. 54. Skull and horns, provisionally referred to this race. In Mr. Hume's MS. list this specimen is stated to come from Astor; but in Mr. Ward's list, where it stands No. 18, the locality—on Mr. Hume's own statement—is given as uncertain. The horns measure 54¼ inches along the curve and 10½ in girth, with a tip-to-tip interval of 26½ inches.

B.—Pir-Panjal Markhor.

Capra falconeri cashmiriensis.

Capra falconeri cashmiriensis, *Lydekker, Wild Oxen, Sheep, and Goats*, p. 290, 1898, *Game Animals of India, etc.* p. 124, 1907; *Ward, Records of Big Game*, ed. 6, p. 360, 1910.

Fig. 8.—Skull and Horns of Pir-Panjal Markhor (*Capra falconeri cashmiriensis*).
From Ward's *Records of Big Game.*

The horns form a less open spiral than in the typical race, and in fine examples show two complete turns. There is probably a gradation from this race to the Astor markhor

on the one hand and the Cabul markhor on the other. The habitat is typically the Pir Panjal Range on the southern side of the Kashmir Valley, but also includes the Kaj-nag Range, on the western side of the Jhelam.

34.—12. 10. 31. 56. Skull and horns (fig. 8). Pir Panjal. This specimen is No. 53 in Mr. Ward's list. The horns measure 48 inches along the curve, $37\frac{3}{4}$ in a straight line, and $12\frac{3}{4}$ in girth, with a tip-to-tip interval of 29 inches. The record length for this race is 63 inches.

C.—Gilgit or Hazara (?) Markhor.

Capra falconeri, subsp.

35.—12. 10. 31. 86. Frontlet and horns (fig. 9). Locality unknown. In regard to this specimen Mr. Hume com-

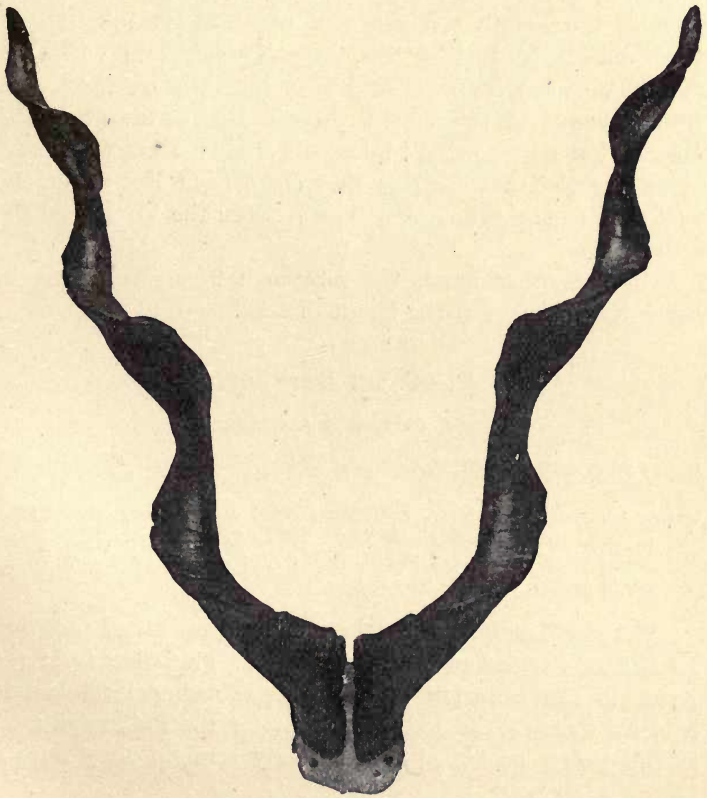

FIG. 9.—FRONTLET AND HORNS OF GILGIT OR HAZARA (?) MARKHOR (*Capra falconeri*, subsp.).
From Ward's *Records of Big Game.*

municated the following note:*—"The horns of this form, hitherto never seen on the entire skull, but usually on the frontal bone only, are brought down occasionally to Peshawar from Cabul, and again find their way sometimes into the Srinagar bazaar. They come from the west and from a long way off, and that is all that can usually be learned about them. They belong to the cork-screw group, but differ from those of the two preceding races in being much slenderer, and also in the greater number of turns put in by their main ridge in any given length of horn measured straight from base to tip. In this respect they are to the Pir Panjal and Astor races what the Suleman Range ones are to those of the Cabul Mountains. The horns make a regular V, broader or narrower, but the tip-to-tip measurement never, I believe, exceeds the length straight, and usually, I think, falls at least one-sixth short of this. The Cabuli from whom the specimen was purchased said that he believed they came from Hazara; at the time I thought that he meant British Hazara, but I now believe he meant Afghan Hazara. I have often thought that perhaps they come from Kafiristan, and that they form a connecting link between the Pir Panjal and Cabul races."

On the other hand, the intermediate character of the horns is suggestive of the Gilgit district.

D.—Cabul Markhor.

Capra falconeri megaceros.

Capra megaceros, *Hutton*, *Calcutta Journ. Nat. Hist.* vol. ii, p. 535, 1842.

Capra falconeri megaceros, *Lydekker*, *Wild Oxen, Sheep, and Goats*, p. 293, 1898, *Proc. Zool. Soc.*, 1902, p. 323, pl. xxvii, *Game Animals of India, etc.* p. 127, 1907; *Ward*, *Records of Big Game*, ed. 6, p. 367, 1910.

The markhor inhabiting the mountain ranges of northern Afghanistan forms another stage in the gradation from the Astor to the Suleman race, its horns being intermediate between those of the latter and those of the Pir Panjal race, In full-grown bucks, although nearly straight, they form a

* See Lydekker, *Game Animals of India, etc.* p. 126.

slightly open spiral, or, in other words, show a tendency towards the cork-screw type so conspicuous in the preceding races. It is probable, indeed, that a complete gradation may be found from the Pir Panjal to the Suleman type by

FIG. 10.—SKULL AND HORNS OF CABUL MARKHOR (*Capra falconeri megaceros*).
From Ward's *Records of Big Game.*

means of the present form, especially as represented in Chitral.

36.—12. 10. 31. 51. Skull and horns (fig. 10). Afghanistan. In this specimen, which stands No. 12 in Mr. Ward's list, the horns measure 32 inches in a straight line and 10 in girth, with a tip-to-tip interval of 27½ inches.

E.—Suleman Markhor.

Capra falconeri jerdoni.

Capra jerdoni, *Hume*, *Proc. Asiat. Soc. Bengal*, 1874, p. 240.

Capra falconeri jerdoni, *Lydekker*, *Wild Oxen, Sheep, and Goats*, p. 294, 1898, *Game Animals of India, etc.* p. 130, 1907; *Ward*, *Records of Big Game*, ed. 6, p. 367, 1910.

In the markhor of the Suleman and other Trans-Indus districts, including Quetta, the horns are relatively short and

Fig. 11.—Skull and Horns of Suleman Markhor (*Capra falconeri jerdoni*).
From Ward's *Records of Big Game*.

form a regular straight cone, on the surface of which the front and hind keels are wound in a sharp spiral, forming in

good specimens two to three complete turns. The bodily size is less than in the typical and Pir Panjal races.

It is probable that either one or other of the following specimens, or one of those presented to the Museum by Mr. Hume in 1891 is the type of this race.

37.—12. 10. 31. 52. Skull and horns (fig. 11). Dehra Ghazi Khan, Suleman Range. In this specimen, which stands No. 22 in Mr. Ward's list, the length of the horns in a straight line is 26¾ inches, the girth 11¼, and the tip-to-tip interval 22$\frac{1}{16}$ inches. The record length for the Suleman race is 48½ inches, in a single horn in the collection of the Museum.

38.—12. 10. 31. 53. Skull and horns. Dehra Ismail Khan. Length of horns 25½ inches; tip to tip 22 inches.

THE TAHR.

Hemitragus jemlaicus.

Capra jemlanica (jemlahica on plate), *Hamilton Smith*, in *Griffith's Animal Kingdom*, vol. iv, p. 308, 1827.

Capra jemlahica, *H. Smith*, *op. cit.*, vol. v, p. 358, 1827.

Capra jharal, *Hodgson*, *Asiat. Research.*, vol. xviii, pp. 2, 129, 1833.

Capra quadrimammis, *Hodgson*, *Journ. Asiat. Soc. Bengal*, vol. iv, p. 710, 1835.

Hemitragus quadrimammis, vel jharal, *Hodgson*, *Journ. Asiat. Soc. Bengal*, vol. x, p. 913, 1841.

Hemitragus jemlaicus, *Gray*, *Cat. Osteol. Brit. Mus.* p. 60, 1847; *Blanford*, *Fauna Brit. India*, *Mamm.* p. 509, 1891; *Lydekker*, *Wild Oxen*, *Sheep*, *and Goats*, p. 298, 1898, *Game Animals of India*, *etc.* p. 134, 1907; *Ward*, *Records of Big Game*, ed. 6, p. 355, 1910; *Pocock*, *Proc. Zool. Soc.* 1910, p. 866.

39.—12. 10. 31. 45. Skull and horns. Kumaon. This specimen stands No. 9 in Mr. Ward's list. Length of horns 14⅛, girth 8⅞, tip to tip 6⅝ inches. The record length is 15½ inches.

40.—12. 10. 31. 46. Skull and horns. Mula-danpur, Kumaon; collected by Mr. N. Troup.

41.—12. 10. 31. 47. Skull and horns. Mula-danpur; collected by Mr. Troup.

THE NILGIRI TAHR.

HEMITRAGUS HYLOCRIUS.

Kemas hylocrius, *Ogilby*, *Proc. Zool. Soc.* 1837, p. 81.

Hemitragus hylocrius, *Blyth*, *Journ. Asiat. Soc. Bengal*, vol. xxviii, p. 291, 1859; *Blanford*, *Fauna Brit. India*, *Mamm.* p. 511, 1891; *Lydekker*, *Wild Oxen, Sheep, and Goats*, p. 303, 1898, *Game Animals of India, etc.* p. 137, 1907; *Ward*, *Records of Big Game*, ed. 6, p. 358, 1910.

42.—12. 10. 31. 48. Mounted head. Near Utacamund, Nilgiris; collected by Mr. Rhodes Morgan. In this specimen, which stands No. 3 in Mr. Ward's list, the horns measure 16¾ inches in length and 8⅞ in girth, with a tip-to-tip interval of 5⅝ inches. The record length is 17½ inches.

43.—12. 10. 31. 50. Skull and horns. Travancore Hills; collected by Mr. A. W. Turner. Length of horns 13⅛ inches.

44.—12. 10. 31. 49. Skull and horns. Near Utacamund; collected by Mr. Morgan.

THE TAKIN.

BUDORCAS TAXICOLOR.

Budorcas taxicolor, *Hodgson*, *Journ. Asiat. Soc. Bengal*, vol. xix, p. 65, pl. i, 1850; *Hume*, *Proc. Zool. Soc.* 1887, p. 483; *Lydekker*, *Game Animals of India, etc.* p. 158, 1907, *Proc. Zool. Soc.* 1908, p. 795; *Ward*, *Records of Big Game*, ed. 6, p. 349, 1910; *Pocock*, *Journ. Bombay Nat. Hist. Soc.* 1910, p. 814, *Proc. Zool. Soc.* 1910, p. 856.

Budorcas taxicola, *Gray*, *Cat. Ungulata Brit. Mus.* p. 45, 1852, *Cat. Ruminants Brit. Mus.* p. 32, 1872, *Hand-List Ruminants Brit. Mus.* p. 101, 1873.

Mr. Hume, in the paper cited above, expressed the opinion that the horns of female takin differ essentially in form from those of males, this opinion being based on a pair of horns which are evidently those of an immature male.

45.—12. 10. 31. 43. Imperfect skull and horns. Mishmi Hills; collected by Mr. Needham. This specimen, which is probably the one represented in figure 1 of the plate accompanying Mr. Hume's paper, stands No. 11 in Mr. Ward's list. The horns measure 20¾ inches in length and 11⅞ in girth, with a tip-to-tip interval of 12½ inches. In a specimen

presented by Mr. Hume to the Museum in 1891 the horn-length is 20⅞ inches. The record length is 25 inches.

46.—12. 10. 31. 44. Immature frontlet and horns. Mishmi Hills; collected by Mr. Needham. This specimen was regarded by Mr. Hume as a female.

THE SEROW, OR SARAO.

CAPRICORNIS SUMATRENSIS.

Antilope sumatraensis, *Bechstein*, *Übersicht vierfüss. Thiere*, vol. i, p. 98, 1799.

Antilope sumatrensis, *Shaw*, *Gen. Zool.* vol. ii, pt. 2, p. 354, 1801.

Antilope (Nemorhedus) sumatrensis, *Hamilton Smith*, *in Griffith's Animal Kingdom*, vol. iv, p. 277, vol. v, p. 352, 1827.

Næmorhædus sumatrensis, *Hamilton Smith*, *Jardine's Nat. Libr.*, *Mamm*, vol. iv, p. 97, 1836.

Nemorhædus sumatrensis, *Cantor*, *Journ. Asiat. Soc. Bengal*, vol. xv, p. 272, 1846; *Blanford*, *Fauna Brit. India*, *Mamm.* p. 314; *Lydekker*, *Game Animals of India*, *etc.* p. 139, 1907; *Ward*, *Records of Big Game*, ed. 6, p. 345, 1910.

Capricornis sumatrensis, *Ogilby*, *Proc*, *Zool. Soc.* 1836, p. 138; *Gray*, *List Mamm. Brit. Mus.* pp. xxvi and 166, 1843.

Capricornis sumatraensis, *Pocock*, *Proc. Zool. Soc.* 1910, p. 176.

The identification of the Indian and Burmese serows with the Sumatran species was suggested by the present writer in 1900, this view being provisionally adopted (*Proc. Zool. Soc.* 1908, p. 175) but subsequently abandoned (*Ibid*, 1910, p. 855) by Mr. Pocock.

A.—Himalayan, or Nepal, Serow.

Capricornis sumatrensis bubalinus.

Antilope thar, *Hodgson*, *Gleanings in Science*, vol. iii, p. 324, 1831, *Proc. Zool. Soc.* 1833, p. 105.

Antilope bubalina, *Hodgson*, *Proc. Zool. Soc.* 1832, p. 12.

Antilope (Nemorhedus) thar, *Hodgson*, *Proc. Zool. Soc.* 1834, p. 86.

Capricornis thar, *Ogilby*, *Proc. Zool. Soc.* 1836, p. 138; *Pocock*, *Ann. Mag. Nat. Hist.* ser. 8, vol. i, p. 187, 1908, *Proc. Zool. Soc.* 1910, p. 855.

Capricornis bubalina, *Gray*, *List.*, *Mamm. Brit. Mus.* p. 166, 1843, *Cat. Ungulata Brit. Mus.* p. 111, 1852, *Cat. Ruminants Brit. Mus.* p. 20, 1872.

Nemorhædus bubalinus, *Blanford*, *Fauna Brit. Ind.*, *Mamm.* p. 513, 1891.

Nemorhædus sumatrensis bubalinus, *Lydekker, Great and Small Game of India*, p. 128, 1900, *Game Animals of India, etc.* p. 139, 1907; *Ward, Records of Big Game*, ed. 6, p. 346, 1910.
Capricornis sumatraensis thar, *Pocock, Proc. Zool. Soc.* 1908, p. 176.

Although *thar* is undoubtedly the earliest scientific name for this serow (which is called *thar* in Nepal), it is liable to lead to confusion with *Hemitragus jemlaicus*.

47.—12. 10. 31. 35. Skull and horns. Garhwal; collected by Mr. F. Wilson. This specimen is the record in the matter of horn-length, which is 12½ inches; the girth of the horns being 6½, and the tip-to-tip interval 2¾ inches.

The following specimens may belong either to this or to *C. s. jamrachi*, Pocock (*Proc. Zool. Soc.*, 1908, p. 183). It might have been expected that all the Himalayan serows east of Darjiling belonged to the last-named race, but Mr. Pocock (*op. cit.*, p. 178) refers a Sikhim specimen to the present one.

48.—12. 10. 31. 33. Skull and horns. Mishmi Hills; collected by Mr. J. Needham.

49.—12. 10. 31. 34. Skull and horns. Garo Hills, Assam; shot by Mr. G. P. Sanderson, author of *Thirteen Years among the Wild Beasts of India*.

50.—12. 10. 31. 89. Skull and horns. Same locality and collector.

B.—Kashmir Serow.

Capricornis sumatrensis humei.

Capricornis sumatraensis humei, *Pocock, Proc. Zool. Soc.* 1908, p. 178.
Nemorhædus sumatrensis humei, *Ward, Records of Big Game*, ed. 6, p. 346, 1910.

Although this race is unrepresented in the Hume Bequest, it is mentioned here on account of being typified by a specimen presented by Mr. Hume to the Museum in 1891.

This race is distinguished by the entire head being uniformly pale chocolate-brown, without any admixture of black, although there are some black hairs on the fore part of the neck. The sides of the front of the lower jaw are white, but there is no light throat-patch.

91. 8. 7. 95. Mounted head. Type. Kashmir. A second

specimen referable to this race is a skull, with horns, from the Pir Panjal Range, Kashmir, presented to the Museum by the writer in 1888. The length of the horns is $9\frac{3}{4}$, the girth $5\frac{1}{8}$, and the tip-to-tip interval 6 inches.

C.—Arakan Serow.

Capricornis sumatrensis rubidus.

Capricornis rubida, *Blyth*, *Cat. Mamm. Mus. Asiat. Soc. Bengal*, p. 174, 1863.

Nemorhædus sumatrensis rubidus, *Lydekker*, *Great and Small Game of India*, p. 131, 1900, *Game Animals of India, etc.* p. 143, 1907; *Ward*, *Records of Big Game*, ed. 6, p. 346, 1910.

Capricornis sumatraensis rubidus, *Pocock*, *Proc. Zool. Soc.* 1908, p. 175.

Distinguished by the prevailing red colour of the coat.

51.—12. 10. 31. 36. Skull and horns, Arakan; collected by Mr. J. D. Mercer. This specimen is the record for this race, the length of the horns being $9\frac{1}{2}$, the girth 5, and the tip-to-tip interval $5\frac{1}{2}$ inches.

52.—12. 10. 31. 37. Skull and horns. Same locality and collector.

D.—Sze-chuan Serow.

Capricornis sumatrensis milne-edwardsi.

Capricornis milne-edwardsi, *David*, *Arch. Mus. Paris*, *Bull*, vol. v, p. 10, 1869.

Nemorhedus edwardsii, *Anderson*, *Zool. Yunnan Exped.* p. 335, 1878.

Nemorhædus sumatrensis milne-edwardsi, *Lydekker*, *Game Animals of India, etc.* p. 143, 1907.

Capricornis sumatrænsis milne-edwardsi, *Pocock*, *Proc. Zool. Soc.* 1908, p. 175.

Characterised by the rufous shanks, coupled with the uniformly blackish brown colour of the whole of the upper-parts.

53.—12. 10. 31. 38. Skull and horns. Tho Toungyen Valley, above Myawadi, Burma.

54.—12. 10. 31. 39. Frontlet and horns. Pabya Hill (600 ft.), 76 miles S.S.W. of Moulmein, Lower Burma.

55.—12. 10. 31. 40. Frontlet and horns. Dorngin Hill, north of Moulmein.

THE GORAL.

NEMORHÆDUS GORAL.

Antilope goral, *Hardwicke*, *Trans. Linn. Soc.*, *Zool.* vol. xiv, p. 518, pl. xiv, 1825.

Antilope (Nemorhedus) goral, *Hodgson*, *Proc. Zool. Soc.* 1834, p. 85, *Journ. Asiat. Soc. Bengal*, vol. iv, p. 488, 1835.

Kemas goral, *Ogilby*, *Proc. Zool. Soc.* 1836, p. 138; *Hodgson*, *Journ. Asiat. Soc. Bengal*, vol. xvi, p. 607, 1847.

Nemorhedus goral, *Gray*, *List Mamm. Brit. Mus.* p. 166, 1843, *Cat. Ungulata Brit. Mus.* p. 112, 1852, *Cat. Ruminants Brit. Mus.* p. 41, 1872; *Horsfield*, *Cat. E. Indian Mus.* p. 168, 1851.

Cemas goral, *Blanford*, *Fauna Brit. India*, *Mamm.* p. 516, 1891.

Urotragus goral, *Lydekker*, *Great and Small Game of India*, p. 136, 1900.

Urotragus bedfordi, *Lydekker*, *Zoologist*, 1905, p. 83; *Ward*, *Records of Big Game*, ed. 6, p. 342, 1910.

Næmorhedus goral, *Pocock*, *Proc. Zool. Soc.* 1908, p. 192.

In employing *Nemorhædus* for the gorals instead of the serows, the writer has followed Mr. Pocock, although he considers such a change much to be deprecated, especially as in Hamilton Smith's original description the name *N. sumatrensis* stands first. As regards the spelling of the name, *Nœmorhedus* is etymologically wrong, as the word is derived from *nemus* (gen. *nemoris*), a wood, and *hœdus*, a young goat. Hamilton Smith himself seems to have been uncertain with regard to the spelling, as on p. 277 of vol. iv. of the "Animal Kingdom," he has Næmorhædine Group, while in the fifth volume he employed *Nœmorhedus*, and in the "Naturalists' Library," *Nœmorhœdus*.

The following specimens may belong either to the present species or to *N. hodgsoni*, Pocock (*Proc. Zool. Soc.* 1908, p. 195).

56.—12. 10. 31. 41. Skull and horns. Near Masuri, Garhwal. In this specimen, which stands No. 14 in Mr. Ward's list, the horns measure 7½ inches in length by 3 in girth, with a tip-to-tip interval of 2¾ inches. The record length for goral-horns is 9⅛ inches.

57.—12. 10. 31. 42. Skull and horns. Kumaon.

THE NILGAI.

BOSELAPHUS TRAGOCAMELUS.

Antilope tragocamelus, *Pallas*, *Misc. Zool.* p. 5, 1766, *Spicilegia Zoologica*, fasc. i, p. 9, 1767, fasc. xii, p. 13, 1777.

Antilope picta, *Pallas*, *Spic. Zool.* fasc. xii, p. 14, 1777.

Portax tragocamelus, *Gray*, *Proc. Zool. Soc.* 1850, p. 146, *Cat. Ungulata Brit. Mus.* p. 141, 1852.

Boselaphus tragocamelus, *Sclater*, *List. Anim. Zool. Gardens*, ed. 8, p. 137, 1883; *Flower and Garson*, *Cat. Osteol. Mus. R. Coll. Surgeons*, pt. ii, p. 260, 1884; *Blanford*, *Fauna Brit. India*, *Mamm.* p. 517, 1891; *Sclater and Thomas*, *Book of Antelopes*, vol. iv, p. 93, 1900; *Lydekker*, *Game Animals of India*, *etc.* p. 164, 1907; *Ward*, *Records of Big Game*, ed. 6, p. 303, 1910.

58.—12. 31. 10. 15. Skull and horns. Oudh. In this specimen, which stands No. 10 in Mr. Ward's list, the horns measure 9 inches in length by $6\frac{5}{8}$ in girth, with a tip-to-tip interval of $3\frac{1}{2}$ inches. The record length is 10 inches.

59.—12. 31. 10. 16. Skull and horns. Oude.

THE CHOUSINGHA, OR FOUR-HORNED ANTELOPE.

TETRACEROS QUADRICORNIS.

Cerophorus (Cervicapra) quadricornis, *Blainville*, *Bull. Soc. Philom.* 1816, pp. 75, 78.

Antilope quadricornis, *Desmarest*, *Nouv. Dict. d'Hist. Nat.* ser. 2, vol. ii, p. 193, 1816.

Antilope (Tetraceros) quadricornis, *Hamilton Smith*, *in Griffiths' Anim. King.* vol. iv, p. 256, vol. v, p. 845, 1827.

Tetraceros quadricornis, *Gray*, *List Mamm. Brit. Mus.* p. 159, 1843, *Cat. Hodgson Coll.* p. 26, 1846; *Blanford*, *Fauna Brit. India*, *Mamm.* p. 519, 1891; *Sclater and Thomas*, *Book of Antelopes*, vol. i, p. 215, 1895; *Lydekker*, *Game Animals of India*, *etc.* p. 171, 1907; *Ward*, *Records of Big Game*, ed. 6, p. 302, 1910; *Pocock*, *Proc. Zool. Soc.* 1910, p. 921.

It is doubtful if the two-horned form known as *T. q. subquadricornutus* really indicates a distinct race. Although formerly classed next to the African duikerboks (*Cephalophus*), the chousingha is now regarded as a near relative of the nilgai.

60–62.—12. 10. 31. 94–96. Three skulls, with horns. Localities unknown.

THE CHIRU, OR TIBETAN ANTELOPE.

PANTHOLOPS HODGSONI.

Antilope hodgsoni, *Abel*, *Calcutta Govt. Gazette*, vide *Phil. Mag.* vol. lxviii, p. 234, 1826, *Edinburgh Journ. Sci.* vol. vii, p. 164, 1827.

Pantholops hodgsoni, *Hodgson*, *Proc. Zool. Soc.* 1834, p. 80, *Journ. Asiat. Soc. Bengal*, vol. xi, p. 282, 1842, *Calcutta Journ. Nat. Hist.* vol. iv, p. 291, 1844; *Gray*, *Cat. Ungulata Brit. Mus.* p. 52, 1852; *Blanford*, *Fauna Brit. India*, *Mamm.* p. 524, 1891; *Sclater and Thomas*, *Book of Antelopes*, vol. iii, p. 45, pl. ii, 1897; *Lydekker*, *Game Animals of India*, *etc.* p. 184, 1907; *Ward*, *Records of Big Game*, ed. 6, p. 233, 1910; *Pocock*, *Proc. Zool. Soc.* 1910, p. 898.

This species, the sole representative of its genus, is remarkable for having only two pairs of premolars in each jaw.

63.—12. 10. 31. 20. Skull and horns. North of Beansi Pass, Kumaon; collected by Mr. Norman Troup. This specimen stands No. 1 in Mr. Ward's list. Length of horns 27¾, girth 6⅛, tip-to-tip interval 13½ inches.

64.—12. 10. 31. 21. Skull and horns. Same locality and collector. No. 3 in Mr. Ward's list. Length of horns 27⅛, girth 5⅞, tip-to-tip interval 15⅛.

65.—12. 10. 31. 22. Skull and horns. Same locality and collector.

THE BLACKBUCK, OR INDIAN ANTELOPE.

ANTILOPE CERVICAPRA.

Capra cervicapra, *Linn.*, *Syst. Nat.* ed. 10, vol. i, p. 17, ed. 12, vol. i, p. 96, 1766.

Antilope cervicapra, *Pallas*, *Misc. Zool.*, p. 9, 1766; *Spicil. Zool.* fasc. viii, p. 18, 1767, vol. xii, p. 19, 1777; *Blanford*, *Fauna Brit. India*, *Mamm.* p. 591, 1891; *Sclater and Thomas*, *Book of Antelopes*, vol. iii, p. 5, pl. xlviii, 1897; *Lydekker*, *Game Animals of India*, *etc.* p. 175, 1907; *Ward*, *Records of Big Game*, ed. 6, p. 235, 1910; *Pocock*, *Proc. Zool. Soc.* 1910, p. 894.

Cervicapra bezoartica, *Gray*, *List Mamm. Brit. Mus.* p. 159, 1843.

Antilope bezoartica, *Gray*, *Proc. Zool. Soc.* 1850, p. 117, *Cat. Ungulata Brit. Mus.* p. 66, 1852; *Jerdon*, *Mamm. India*, p. 275, 1867.

66.—12. 10. 31. 18. Skull and horns (fig. 12). Gurgaon, near Delhi. In this beautiful head, which stands No. 3 in Mr. Ward's list, the horns measure 28½ inches in a

straight line, with a girth of 5 inches, and a tip-to-tip interval of 17¾ inches.

67.—12. 10. 31. 17. Skull and horns. Sirsa, Punjab shot by Mr. Hume. Stands No. 13 in Mr. Ward's list. The

FIG. 12.—SKULL AND HORNS OF BLACKBUCK (*Antilope cervicapra*).
From Ward's *Records of Big Game.*

horns measure 26⅜ inches in length, by 5 in girth, with a tip-to-tip interval of 17⅞ inches.

68.—12. 10. 31. 19. Skull and horns. Gurgaon; collected by Mr. W. Chill.

69.—12. 10. 31. 26. Skull and horns of female. Gurgaon. Females are normally hornless; and in this instance the horns curve outwards and downwards in an altogether peculiar manner. The specimen is figured in *The Book of Antelopes*, vol. iii., p. 14.

THE CHINKARA, OR INDIAN GAZELLE.

GAZELLA BENNETTI.

Antilope bennettii, *Sykes*, *Proc. Zool. Soc.* 1831, p. 104.

Gazella bennettii, *Gray*, *List Mamm. Brit. Mus.* p. 161, 1843.

Gazella bennettii, *Blanford*, *Fauna Brit. India*, *Mamm.* p. 526, 1891; *Sclater and Thomas*, *Book of Antelopes*, vol. iii, p. 119, pl. lx, 1898; *Lydekker*, *Game Animals of India*, *etc.* p. 201, 1907; *Ward*, *Records of Big Game*, ed. 6, p. 249, 1910.

70.—12. 10. 31. 23. Skull and horns. Gurgaon, near Delhi; collected by Mr. Hume. No. 20 in Mr. Ward's list. Length of horns $12\frac{3}{4}$, girth $4\frac{1}{4}$, tip to tip 5 inches.

71.—12. 10. 31. 24. Skull and horns. Delhi.

72.—12. 10. 31. 25. Skull and horns. Gurgaon; collected by Mr. W. Chill.

73.—12. 10. 31. 72. Skull and horns. Locality unknown.

THE GOA, OR TIBETAN GAZELLE.

GAZELLA PICTICAUDATA.

Procapra picticaudata, *Hodgson*, *Journ. Asiat. Soc. Bengal*, vol. xv, p. 334, pl. ii, 1847.

Antilope picticaudata, *Wagner*, in *Schreber's Säugthiere*, *Suppl.* vol. v, p. 408, 1855.

Gazella picticaudata, *Brooke*, *Proc. Zool. Soc.* 1873, p. 547; *Sclater and Thomas*, *Book of Antelopes*, vol. iii, p. 71, 1898; *Lydekker*, *Game Animals of India*, *etc.* p. 189, 1907; *Ward*, *Records of Big Game*, ed. 6, p. 241, 1910.

74.—12. 10. 31. 27. Skull and horns. Hills north of Kumaon. No. 18 in Mr. Ward's list. Length of horns $12\frac{7}{8}$, girth $3\frac{7}{8}$, tip to tip $4\frac{3}{4}$ inches. In a skull presented by Mr. Hume in 1891 the horn-length is $13\frac{1}{2}$ inches. The record length is $14\frac{1}{8}$ inches.

75.—12. 10. 31. 28. Skull and horns. Dhama Valley, on northern side of Beansi Pass; collected by Mr. N. Troup.

THE GOITRED, OR PERSIAN GAZELLE.

GAZELLA SUBGUTTUROSA.

Antilope subgutturosa, *Güldenstädt, Acta Ac. sci. Petrop.* 1778, pt. 1, p. 251, 1780.

Gazella subgutturosa, *Gray, List, Mamm., Brit. Mus.* p. 160, 1843; *Blanford, Fauna Brit. India, Mamm.* p. 528, 1891; *Sclater and Thomas, Book of Antelopes*, vol. iii, p. 89, 1898; *Lydekker, Game Animals of India, etc.* p. 192, 1907; *Ward, Records of Big Game*, ed. 6, p. 246, 1910.

It is possible that one or both of the under-mentioned specimens may belong to the allied *G. seistanica* (Lydekker *Nature*, vol. lxxxiii., p. 202, 1910) of Eastern Persia.

76.—12. 10. 31. 100. Skull and horns. Pishin Valley, Kelat, Baluchistan; collected by Col. Sir O. B. St. John. In this specimen, which stands No. 6 in Mr. Ward's list, the horns measure $13\frac{1}{4}$ inches in length by $4\frac{1}{2}$ in girth, with a tip-to-tip interval of 4 inches.

77.—12. 10. 31. 29. Skull and horns. The horns are smaller than those of the preceding specimen, the girth being $3\frac{3}{4}$, and the tip-to-tip 3 inches. Locality unknown.

THE SAIKIK, OR YARKAND GAZELLE.

GAZELLA YARKANDENSIS.

Gazella subgutturosa *var.* yarkandensis, *Blanford, Journ. Asiat. Soc. Bengal*, vol. xliv, pt. 2, p. 112, 1879, *Zool. 2nd Yarkand Mission, Mamm.* p. 88, pl. xv, 1879; *Sclater and Thomas, Book of Antelopes*, vol. iii, p. 94, 1898; *Lydekker, Game Animals of India, etc.* p. 196, 1907.

Gazella yarcandensis, *Lydekker, Nature*, vol. lxxxiii, p. 202, 1910; *Ward, Records of Big Game*, ed. 6, p. 247, 1910.

78.—12. 10. 31. 30. Frontlet and horns. Plains of Yarkand; collected by Mr. A. Dalgleish. This specimen stands No. 2 in Mr. Ward's list. Length of horns 16, girth 15, tip-to-tip $3\frac{1}{4}$ inches. The record length is 17 inches.

79.—12. 10. 31. 31. Skull and horns. Same locality and collector.

80.—12. 10. 31. 32. Skull and horns. Same locality and collector.

Family CERVIDÆ.

THE SHOU.

Cervus wallichi.

Cervus wallichii, *Cuvier*, *Ossemens Fossiles*, ed. 4, vol. vi, p. 89, 1835; *Pocock*, *Proc. Zool. Soc.* 1912, p. 574; *Lydekker*, *Field*, vol. cxx, p. 860, 1912.

Five Central Asian deer, namely, *C. wallichi*, from the neighbourhood of the Mansarowar Lake, *C. affinis*, of the Chumbi Valley and Bhutan, *C. cashmirianus*, of Kashmir, *C. macneilli*, of Sze-chuan, and *C. kansuensis*, of Kan-su, and probably Yun-nan, constitute a group of the typical section of the genus, distinct from the red deer group (*C. elaphus*) on the one hand, and the wapiti group (*C. canadensis*) on the other. They are provisionally allowed specific rank by Mr. Pocock, but the present writer has given reasons for regarding *affinis* as a local race of *wallichi*, and *kansuensis* as a race of *macneilli*, whilst *cashmirianus* represents by itself a third species.

The present species, in this wider sense, is characterised, in addition to the peculiar form of the antlers,* by the extension of the white on the back of the thighs above the root of the tail to form a rump-patch, with little or no blackish brown in front of the same.

Sikhim, or True, Shou.

Cervus wallichi affinis.

Cervus affinis, *Hodgson*, *Journ. Asiat. Soc. Bengal*, vol. x, p. 721, 1841; *Blanford*, *Fauna Brit. India*, *Mamm.* p. 537, 1891; *Lydekker*, *Deer of All Lands*, p. 88, 1898, *Game Animals of India*, *etc.* p. 215, 1907; *Ward*, *Records of Big Game*, ed. 6, p. 37, 1910; *Pocock*, *Proc. Zool. Soc.* 1912, p. 572.

Distinguished from the Mansarowar *C. wallichi wallichi* by the much smaller size of the white rump-patch, which is

* In the specimen of the typical *wallichi* now living in the Zoological Society's Gardens, the antlers in September appeared to be of the general type of those of the Sikhim shou.

traversed by a longitudinal dark streak, and apparently by the pale fawn-brown (instead of earthy brown) colour.

81.—12. 10. 31. 4. Skull and antlers (fig. 13). Northern Bhutan; collected by Mr. L. Mandelli. In this specimen,

FIG. 13.—SKULL AND ANTLERS OF SIKHIM SHOU (*Cervus wallichi affinis*).
From Ward's *Records of Big Game.*

which stands No. 1 in Mr. Ward's list, the dimensions of the antlers are as follows: length on outer curve $55\frac{3}{4}$, girth $6\frac{1}{2}$, tip-to-tip $17\frac{1}{4}$, widest inside span $40\frac{3}{8}$ inches.

THE HANGUL.

CERVUS CASHMIRIANUS.

Cervus hanglu, *Wagner, in Schreber's Saügthiere*, vol. iv, p. 352 (note), 1843; *Pocock, Proc. Zool. Soc.* 1910, p. 566.

Cervus cashmeriensis, *Adams, Proc. Zool. Soc.* 1858, p. 529.

Cervus wallichii, *Jerdon, Mamm. India*, p. 1867, nec *Cuvier*.
Cervus cashmeerianus, *Falconer's Pal. Mem.* vol. i, p. 576, 1868.
Cervus cashmirianus, *Fitzinger, Sitzber. Ak. Wien*, vol. lxix, pt. 1, p. 586, 1874; *Blanford, Fauna Brit. India, Mamm.* p. 355, 1891; *Lydekker, Deer of All Lands*, p. 83, pl. iv, 1898, *Game Animals of India, etc.* p. 208, 1907; *Ward, Records of Big Game*, ed. 6, p. 32, 1910.

In addition to the form of the antlers, this species is distinguished from the other members of the group by the white chin and lower lip, the pale fawn muzzle, and the broadly pointed ears, of which the upper margin is straight. The white of the hind-quarters is restricted to the hind part of the thighs, and does not extend beyond the sides of the root of the tail, of which the lower surface is white and the upper dark. In front the white area is bordered by a broad blackish brown band, forming a patch on the rump.

82.—12. 10. 31. 1. Skull and antlers. Sind Valley, Kashmir; collected by Mr. A. Dalgleish. This specimen is No. 24 in Mr. Ward's list, the measurements of the antlers being as follows: length on outer curve 43, girth 6, tip to tip 20, widest inside span 35 inches. In a specimen presented by Mr. Hume to the Museum in 1891 the antler-length is 45⅞ inches; the record length is 48½ inches.

83.—12. 10. 31. 2. Skull and antlers. Same locality and collector.

THE YARKAND STAG.

CERVUS YARKANDENSIS.

Cervus cashmirianus yarkandensis, *Blanford, Proc. Zool. Soc.* 1892, p. 117; *Lydekker, Deer of All Lands*, p. 88, 1898.
Cervus yarkandensis, *Blanford, Proc. Zool. Soc.* 1893, p. 447.
Cervus yarcandensis, *Lydekker, Proc. Zool. Soc.* 1896, p. 933, *Game Animals of India, etc.* p. 215, 1907; *Ward, Records of Big Game*, ed. 6, p. 35, 1910.

Apart from a marked difference in the form of the antlers, this species is distinguished by its light rufous colour, the presence of a large orange rump-patch, including the tail, which is also orange, and by less blackish brown on the buttocks.

84.—12. 10. 31. 3. Skull and antlers (fig. 14). Maralbashi Forest, N.W. of Kashgar; collected by Mr. A. Dalgleish. This specimen stands fourth in Mr. Ward's list. The measurements of the antlers are: length on outer curve

39½, girth 6, tip to tip 24½, widest inside span 25 inches. A second specimen with rather longer antlers (40¼ inches) is mentioned in the list as being in the Hume collection, but

FIG. 14.—SKULL AND ANTLERS OF YARKAND STAG (*Cervus yarkandensis*).
From Ward's *Records of Big Game.*

it may be one of those presented by Mr. Hume to the Museum in 1891. The record length is 41½ inches, in a specimen (No. 92. 7. 71. 1.) presented to the Museum by Sir H. Lennard. The type specimen is a skull, with antlers, presented to the Museum by Major C. S. Cumberland.

THE BARASINGH, OR SWAMP-DEER.

CERVUS (RUCERVUS) DUVAUCELI.

Cervus duvaucelii, *Cuvier, Ossemens Fossiles*, ed. 3, vol. iv, p. 505, 1825.

Rucervus duvaucelii, *Fitzinger, Sitzber. Ak. Wien*, vol. lxviii, pt. 1, p. 356, 1873.

Cervus duvauceli, *Brooke, Proc. Zool. Soc.* 1878. p. 905; *Blanford, Fauna Brit. India, Mamm.* p. 538, 1891; *Lydekker, Game Animals of India, etc.* p. 245, 1907.

Cervus (Rucervus) duvauceli, *Lydekker, Deer of All Lands*, p. 189, pl. xiv, 1898; *Ward, Records of Big Game*, ed. 6, p. 79, 1910; *Pocock, Proc. Zool. Soc.* 1910, p. 943.

85.—12. 10. 31. 5. Skull and antlers. Gowhati, Assam. Neither this nor the following specimen has antlers sufficiently large to be included in Mr. Ward's list.

86.—12. 10. 31. 6. Skull and antlers. Kheri district, Oudh.

THE THAMIN.

CERVUS (RUCERVUS) ELDI.

Cervus eldii, *Guthrie, Calcutta Journ. Nat. Hist.*, vol. ii, p. 417, 1842.

Panolia eldii, *Gray, Cat. Ungulata Brit. Mus.* p. 202, 1852.

Cervus eldi, *Beavan, Proc. Zool. Soc.*, 1867, p. 759; *Blanford, Fauna Brit. India, Mamm.* p. 541, 1891; *Lydekker, Game Animals of India, etc.* p. 252, 1907.

Rucervus eldi, *Garrod, Proc. Zool. Soc.* 1877, p. 17.

Cervus (Rucervus) eldi, *Lydekker, Deer of All Lands*, p. 195, 1898; *Ward, Records of Big Game*, ed. 6, p. 77, 1910.

Cervus (Panolia) eldi, *Pocock, Proc. Zool. Soc.* 1910, p. 944.

87.—12. 10. 31. 7. Skull and antlers. Manipur; collected by Mr. Hume. In this specimen, which stands No. 16 in Mr. Ward's list, the measurements of the antlers are as follows: length on outside curve $38\frac{1}{4}$, girth $6\frac{1}{4}$, tip to tip 24, widest inside span $30\frac{3}{4}$ inches. The record length is 42 inches.

88.—12. 10. 31. 8. Skull and antlers. Thatone, Burma.

THE SAMBAR.

CERVUS (RUSA) UNICOLOR.

Cervus unicolor, *Bechstein, Algemein. Übersicht vierfüss. Thiere*, vol. i, p. 112, 1799; *Blanford, Fauna Brit. India, Mamm.* p. 543, 1891; *Lydekker, Game Animals of India, etc.* p. 223, 1907.

Cervus aristotelis, *Cuvier*, *Ossemens Fossiles*, ed. 3, vol. iv, p.[503, 1825.

Cervus (Rusa) unicolor, *Hamilton Smith*, *in Griffith's Animal Kingdom*, vol. iv, p. 108, 1827; *Lydekker*, *Deer of All Lands*, p. 144, pl. x, 1898; *Ward*, *Records of Big Game*, ed. 6, p. 59, 1910.

Rusa unicolor, *Pocock*, *Proc. Zool. Soc.* 1910, p. 946.

A.—Indian Sambar.

Cervus unicolor unicolor.

FIG. 15.—SKULL AND ANTLERS OF INDIAN SAMBAR (*Cervus* [*Rusa*] *unicolor unicolor*).
From Ward's *Records of Big Game*.

89.—12. 10. 31. 9. Skull and antlers (fig. 15). Chand district, Central Provinces. In this specimen, which stands No. 6 in Mr. Ward's list, the antler-measurements are as follows: length on outer curve 46½, girth 6⅜, tip to tip 24⅛, widest inside span 30⅞ inches. The record length is 50⅛ inches.

B.—Malay Sambar.

Cervus unicolor equinus.

Cervus equinus, *Cuvier, Ossémens Fossiles*, ed. 3, vol. iv, p. 45, 1825.

Cervus unicolor equinus, *Lydekker, Deer of All Lands*, p. 150, pl. xi, 1898, *Game Animals of India, etc.* p. 232, 1907; *Ward, Records of Big Game*, ed. 6, p. 63, 1910.

90.—12. 10. 31. 10. Skull and antlers. Garo Hills; shot by Mr. G. P. Sanderson.

THE CHITAL, OR AXIS DEER.

CERVUS (AXIS) AXIS.

Cervus axis, *Erxleben, Syst. Regn. Animal.* p. 312, 1777; *Blanford, Fauna Brit. India, Mamm.* p. 546, 1891; *Lydekker, Game Animals of India, etc.* p. 233, 1907; *Ward, Records of Big Game*, ed. 6, p. 68, 1910.

Cervus (Axis) axis, *Hamilton Smith, in Griffith's Animal Kingdom*, vol. iv, p. 117, 1827.

Axis maculata, *Gray, List Mamm. Brit. Mus.* p. 178, 1843.

Cervus (Rusa) axis, *Lydekker, Deer of All Lands*, p. 179, 1898.

Axis (Axis) axis, *Pocock, Proc. Zool. Soc.* 1910, p. 948.

91.—12. 10. 31. 11. Skull and antlers (fig. 16). Dehra Dun. The length of the antlers, according to Mr. Hume's measurement, is 38¼ inches on one side and 36¾ on the other. The record length is 39 inches.

92.—12. 10. 31. 12. Skull and antlers. Basim district, Berar. This specimen is No. 9 in Mr. Ward's list. Length of antlers 37½, girth 4½, tip to tip 24⅜ inches.

THE PARA, OR HOG-DEER.

CERVUS (HYELAPHUS) PORCINUS.

Cervus porcinus, *Zimmermann, Species Zool. Geogr. Quadr.* p. 552, 1777; *Blanford, Fauna Brit. India, Mamm.* p. 549, 1891; *Lydekker, Game Animals of India, etc.* p. 241, 1907.

Cervus (Axis) porcinus, *Hamilton Smith, in Griffith's Animal Kingdom*, vol. iv, p. 197, 1827.

Axis porcinus, *Jardine*, *Nat. Library*, *Mamm.* vol. iii, p. 196, 1835.
Cervus (Hyelaphus) porcinus, *Sundevall*, *K. Svenska Vet. Ak. Handl.* 1844, p. 181, 1846; *Ward*, *Records of Big Game*, ed. 6, p. 70, 1910.
Hyelaphus porcinus, *Gray*, *List Osteol. Brit. Mus.* p. 67, 1847.
Cervus (Rusa) porcinus, *Lydekker*, *Deer of All Lands*, p. 175, 1898.
Axis (Hyelaphus) porcinus, *Pocock*, *Proc. Zool. Soc.* 1910, p. 950.

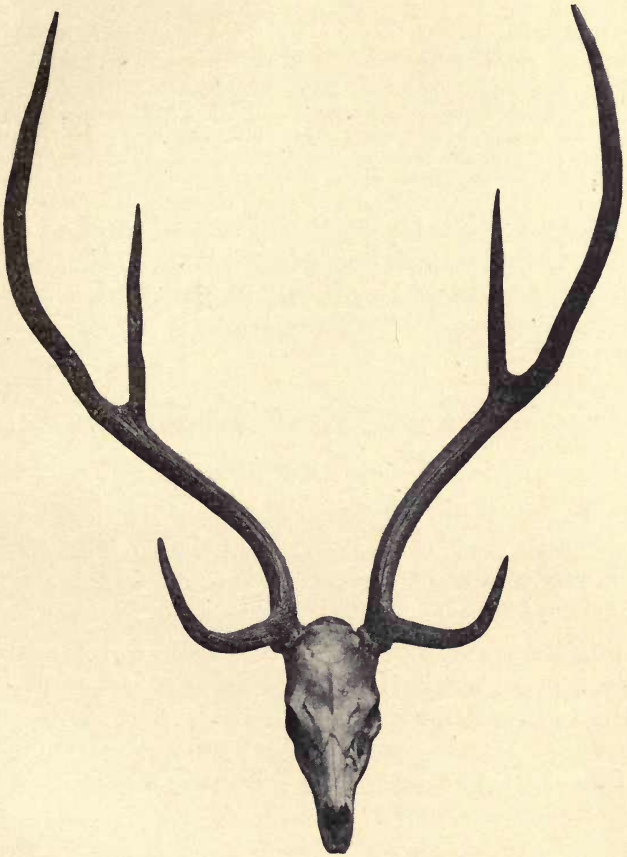

FIG. 16.—SKULL AND ANTLERS OF CHITAL (*Cervus* [*Axis*] *axis*).
From Ward's *Records of Big Game.*

93.—12. 10. 31. 13. Frontlet and antlers. Bulundshahr, Ganges Khadir, Rohilkhand; collected by Mr. Hume. This specimen stands No. 14 in Mr. Ward's list; length of antlers $19\frac{1}{4}$, girth $3\frac{1}{8}$, tip to tip $9\frac{1}{2}$ inches. The Museum possesses

a Burmese specimen (No. 1. 9. 7. 2.), in which the antler-length is $21\frac{5}{8}$ inches; the record length being $23\frac{1}{4}$ inches.

THE MUNTJAC.

CERVULUS MUNTJAC.

Cervus muntjac, *Zimmermann, Geogr. Geschichte*, vol. ii, p. 131, 1780.
Muntiacus muntjac, *Rafinesque Analyse Nature*, p. 56, 1815.
Cervulus muntjac, *Blainville, Bull. Soc. Philom.* 1816, p. 77; *Blanford, Fauna Brit. India, Mamm.* p. 532, 1891; *Lydekker, Deer of All Lands*, p. 203, 1898, *Game Animals of India, etc.* p. 257, 1907; *Ward, Records of Big Game*, ed. 6, p. 80, 1910; *Pocock, Proc. Zool. Soc.* 1910, p. 952.

94.—12. 10. 31. 14. Skull and antlers. Berar. In this specimen, which stands No. 13 in Mr. Ward's list, the antlers measure $6\frac{1}{2}$ inches in length by 3 in girth, with a tip-to-tip interval of $3\frac{3}{8}$ inches; the record length is $10\frac{3}{8}$ inches.

THE KASTURA, OR MUSK-DEER.

MOSCHUS MOSCHIFERUS.

Moschus moschiferus, *Linn. Syst. Nat.* ed. 12, vol. i, p. 91, 1766; *Blanford, Fauna Brit. India, Mamm.* p. 552, 1891; *Lydekker, Deer of All Lands*, p. 311, 1898, *Game Animals of India, etc.* p. 266, 1907; *Ward, Records of Big Game*, ed. 6, p. 114, 1910; *Pocock, Proc. Zool. Soc.* 1910, p. 937.

95.—12. 10. 31. 97. Skull. Garhwal. In this specimen —No. 7 in Mr. Ward's list—the length of the exposed portion of the tusk is 3 inches; the maximum recorded length is 4 inches.

96.—12. 10. 31. 98. Skull. Himalaya.

Family **RHINOCEROTIDÆ.**

THE GREAT INDIAN RHINOCEROS.

Rhinoceros unicornis.

Rhinoceros unicornis, *Linn. Syst. Nat.* ed. 10, vol. i. p. 56, 1758, ed. 12, vol. i, p. 104, 1766; *Blanford, Fauna Brit. India, Mamm.* p. 472, 1891; *Lydekker, Game Animals of India, etc.* p. 26, 1907, *Supplement*, p. 2, 1911.

It may be well to mention that Blanford believed the range of this species to be mainly, if not entirely, restricted to the area east of the Tista River. It has, however, been pointed out in the *Supplement to Game Animals of India* that the species is common in parts of the Nepal Terai, where it seems to be more abundant than in Kuch-Behar and Assam.

97.—12. 10. 31. 105. Mounted head. Locality unknown, but probably Assam. The horn is quite small.

AFRICAN SPECIMENS

In addition to the foregoing Asiatic specimens, which constitute its main value and interest, Mr. Hume's bequest included the following horns of Somali antelopes, such as are commonly offered for sale to homeward-bound passengers at Aden. These specimens are referable to the following three species :—

THE AOUL, OR SÖMMERRING'S GAZELLE.

Gazella soemmerringi.

98–99.—12. 10. 31. 103–4. Two pairs of horns, on the frontlets. Somaliland.

THE GERENUK.

LITHOCRANIUS WALLERI.

100–101.—12. 10. 31. 101–2. Two pairs of horns, on the frontlets. Somaliland.

THE BEISA.

ORYX BEISA.

102–105.—12. 10. 31. 90–93. Four pairs of horns, on the frontlets. Somaliland.

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